REMARKS

Claim Amendments

Claims 1, 2, 41-55 have been amended, claims 23-40 have been cancelled and new claims 56 and 57 have been added.

The amendments to claim 1 include a removal of a portion of the claim. The Examiner gave no patentable weight to the limitations of:

> "the array of ultraviolet lamps including a plurality of stick lamps, where at least some stick lamps are installed with their lower ends secured in a lamp rack assembly and their upper ends installed in a frame such that the long axis of each of the at least some stick lamps extends vertically".

As such, this subject matter has been removed from currently amended claim 1 and moved to new claim 56.

Claim Rejections

Claim 31 was objected to by the Examiner on the basis that it claimed dependency to itself. The Applicant has cancelled previous claim 31 so this objection is now moot.

Rejection of claims 1, 2, 9, 20, 23-24 and 28 on the basis of 35 USC 102(b)

The Examiner rejected claims 1, 2, 9, 20, 23-24 and 28 on the basis of 35 USC 102(b) as being anticipated by Arnott (US Patent no. 2,279,810).

Arnott discloses a device that treats a contaminated airflow by passing the contaminated air flow through a portion of duct containing UV lights. Bacteria contaminating the airflow is killed as a result of coming into contact with the radiation from the UV lights. Arnott makes this clear in the following passages:

> "The principal object of my invention, generally considered, is the development of calculating charts and a method and apparatus based thereon, **whereby ultra-violet generating lamps are disposed to efficiently sterilize the air in conditioning ducts**, so that said air may be transmitted to an auditorium or other portions of a building, **after being freed of bacteria and other micro-organisms carried thereby**." (Page 1, left column, lines 6-14)

Arnott clearly teaches in this passage that the air containing contaminants (i.e. bacteria and other micro-organisms) is exposed to ultraviolet light in conditioning ducts, so that the contaminated air is treated to remove the contaminants **before** the treated air is transmitted to a room in a building.

Arnott also clearly teaches that the contaminants must be directly subjected to the radiation from the UV lights for the contaminants to be treated.

> "The proper installation of lamps in such ducts requires considerable care. **A definite amount of radiation is necessary to kill a given percentage of air-borne organisms as they move rapidly in the duct.**" (Page 1, right column, lines 38-43)

In regard to Claim 1, currently amended claim 1 specifies that the intake aperture is positioned so that it is exposed to "only substantially uncontaminated air" with the result that only uncontaminated air flows through the array of UV lights, rather than contaminated air from the enclosure. This is specified in claim 1 as follows:

> "a housing containing an array of ultraviolet lamps mounted within an enclosure in said housing, said enclosure having an intake aperture and an exhaust aperture, **said intake aperture exposed to only substantially uncontaminated air**, said housing and said array forming an airflow processor

such that **uncontaminated air entering said intake aperture** passes through said array before exiting said exhaust aperture"

Arnott does not teach this. Rather, Arnott makes it clear that contaminated air must come into direct contact with UV lights in order for the contaminated air to be treated. Therefore, the Applicant respectfully submits that not only does the Arnott reference not anticipate currently amended claim 1, because Arnott fails to teach passing **uncontaminated air** through his device, but in fact, Arnott teaches against the presently claimed invention.

In regard to claim 2, currently amended claim 2 specifies that there is an intake conduit for the device that is exposed to only ambient air external to the workspace. This excludes any of the contaminated air from the workspace being passed through the array of ultraviolet lights. This claim reads as follows:

"an intake conduit having an upstream end **exposed to only ambient air external** to said workspace and an opposite downstream end mounted to said intake aperture in fluid communication with said array"

The Applicant respectfully submits that Arnott fails to disclose this element. Arnott makes it clear that because he contemplates the device only treating contaminants in an airflow that come into direct contact with the radiation from the UV lights of his device, the contaminated air in the enclosure (or room) must be passed through the device in order for it to be treated. To take air only from a source external to the room that contains the air to be treated runs contrary to the teachings of Arnott.

In regards to claims 9 and 20, these claims depend from claim 1 and the Examiner has also rejected these claims on the basis that they are anticipated by Arnott. However, for the above reasons the Applicant respectfully submits that currently amended claim 1 is

not anticipated by Arnott and therefore respectfully submits that claims 9 and 20, which depend from claim 1, are also not anticipated by the Arnott reference.

In regard to the rejection of claims 23, 24 and 28 as being anticipated by the Arnott reference, the Applicant has canceled these claims rendering the previous rejections moot.

Rejection of claims 13-15 and 17-18 on the basis of 35 USC 102(e)

Claims 13-15 and 17-18 were rejected by the Examiner under 35 USC 102(e) as being anticipated by Soremark (U.S.P.N. 6,358,478). The Applicant respectfully submits that these claims are not anticipated by the Soremark reference because Soremark fails to teach all of the limitations present in the claims.

Currently amended claim 13 specifies two steps. The first step is provided as follows:

> "generating hydroxyl radicals **in an air-flow of non-contaminated air**".

The second step is provided as follows:

> "urging said air-flow into said workspace after said generating of said hydroxyl radicals in said airflow".

In contrast, Soremark teaches a method which requires the hydroxyl radicals to be generated in an airflow of **contaminated air**. Soremark not only fails to teach the claimed method, Soremark clearly teaches way from the method specified in claim 13. The Applicant therefore respectfully submits that Soremark fails to teach all of the steps specified in claim 13 and therefore the Soremark reference does not anticipate the claim.

Soremark does not teach generating hydroxyl radicals in an air-flow of **non-contaminated air**, but rather, Soremark teaches away from this step by clearly teaching the generation of hydroxyl radicals in an air-flow of **contaminated air**. This is provided in the reference as follows:

> "The procedure according to the present invention is as follows. The **medium which is to be treated** is preferably introduced into some form of enclosure. In the enclosure, the **medium is exposed to UV radiation** with a spectral distribution within the range of 180-400 nm." (Col 4, lines 45-49)

Soremark teaches that the medium (i.e. contaminated air) to be treated must be removed from the internal space and introduced into an enclosure. Once in the enclosure the contaminated air is exposed to UV radiation to "treat" the contaminated air by generating hydroxyl radicals in the contaminated airflow. In contrast, the presently claimed method specifies the generation of hydroxyl radicals in an airflow of **non-contaminated air**. This airflow of non-contaminated air is then urged into the workspace. This introduces the airflow of non-contaminated air containing the generated hydroxyl radicals to the contaminated air in the enclosed workspace, allowing the airflow to mix with the contaminated air. With the mixing of the airflow and the contaminated air in the enclosed workspace, the hydroxyl radicals come into contact with the contaminated air in the enclosed workspace allowing the hydroxyl radicals to act on the contaminants in the enclosed workspace.

The Applicant respectfully submits the claim 13 is not anticipated by Soremark because Soremark teaches generating hydroxyl radicals in an airflow of **contaminated air**, rather than an airflow of **non-contaminated** air as required by the claim.

In regards to claims 14 through 15, 17 and 18, these claims depend from claim 13 and the Examiner has rejected these claims on the basis that, like claim 13, the claims are anticipated by the Soremark reference. However, for the above reasons, the Applicant

respectfully submits that currently amended claim 13 is not anticipated by Soremark and therefore claims 13 through 15 and 17, which depend from claim 13, are also not anticipated by the Soremark reference.

Rejection of claims 6-7 on the basis of 35 USC 103(a)

Claims 6-7 were rejected by the Examiner under 35 USC 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810). The Applicant respectfully submits that claims 6 and 7 are not obvious as a result of the Arnott reference.

Both claims 6 and 7 ultimately depend from claim 1. Currently amended claim 1 is not taught by Arnott because Arnott fails to teache a device having an intake aperture exposed to only substantially uncontaminated air so that uncontaminated air is passed through a housing containing an array of ultraviolet lights, as required by currently amended claim 1, and an upstream end only exposed to ambient air external to said workspace, as required by claim 2. Even if Arnott was modified as suggested by the Examiner, the resulting apparatus would not include the limitations of claims 1 and 2. The Applicant therefore respectfully submits that neither claim 6 nor 7 are rendered obvious by the Arnott reference.

Rejection of claim 16 on the basis of 35 USC 103(a)

Claim 16 was rejected by the Examiner under 35 USC 103(a) as being obvious with regard to Soremark (U.S.P.N. 6,358,478). The Applicant respectfully submits that the claims are not obvious as a result of the Soremark reference.

Claim 16 reads "wherein said airflow of non-contaminated air is fresh air external to the enclosed workspace".

The Examiner states that:

> "Soremark teaches disinfecting air flowing within a building (col. 5, lines 39-42) such that it would have been obvious to one of the ordinary skill in the art that conventional building air handling systems where those systems are known to incorporate fresh ambient air (considered non-contaminated) with recycled internal air."

However, even if the system taught be Soremark was modified, as suggested by the Examiner, the resulting method would not result in the method specified by claim 16. Soremark teaches that the disclosed device treats contaminants in an airflow passing through the UV lights. Therefore, to treat contaminated air in a room, Soremark teaches that it is necessary to remove contaminated air from the room and pass the removed air through the UV lights in order to treat the air.

The Examiner has suggested that it would have been obvious to mix fresh (non-contaminated) air with contaminated internal air to be treated and then "disinfecting" the airflow consisting of the mixture of external fresh air and recycled contaminated internal air. However, claim 16 specifies that "said airflow of non-contaminated air **is** fresh air external to the enclosed workspace". Mixing fresh air with contaminated internal air does not result in an airflow of **non-contaminated** air that **is** fresh air. Rather, it would result in an airflow of **less-contaminated** air that **contains** fresh air. Even if fresh air was mixed with the contaminated internal air, the resulting airflow would be an airflow of contaminated air, not an airflow of non-contaminated air as required by claims 13 and 16.

The Applicant respectfully submits that claim 16 is not rendered obvious in light of Soremark because, even if the method disclosed by Soremark was modified, as suggested by the Examiner, the resulting airflow would be an airflow of less-contaminated air that is not fresh air external to the internal space, but rather only contains some fresh air external to the internal space.

Rejection of claims 5, 8, 41-48 and 53-54 on the basis of 35 USC 103(a)

Claims 5, 8, 41-48 and 53-54 are rejected by the Examiner under 35 USC 103(a) as being obvious with regard to Arnott (U.S.P.N. 2,279,810), as applied to claims 1 and 2 and further in view of Crook (U.S.P.N. 6,354,937).

With regard to claims 5 and 8, Crook teaches a flexible hose. Crook does not teach the use of UV lights acting on an airflow. The Applicant respectfully submits that claim 1 and 2 are not anticipated by Arnott because Arnott fails to teach passing uncontaminated air through a housing containing an array of ultraviolet lights, as required by claim 1, and an upstream end only exposed to ambient air external to said workspace, as required by claim 2. Therefore, even if Arnott was modified with the teaching of Crook, as suggested by the Examiner, the resulting apparatus would not include the limitations of claims 1 and 2. The Applicant therefore respectfully submits that neither claims 5 and 8 would not be rendered obvious by the Crook reference because even if the teachings in Crook were used to modify the device disclosed by Arnott, as suggested by the Examiner, the resulting device would not have all the required limitations of claims 1 and 2.

The Applicant has amended claim 41 to specify a method for decontaminating contaminated air in a workspace. Claim 41 specifies the following steps:

> "providing a housing including an enclosure with an intake aperture and an exhaust aperture"
>
> "providing an array of ultraviolet lamps mounted within the enclosure, said housing and said array forming a gas flow processor such that a flow of gas entering said intake aperture passes through said array before exiting said exhaust aperture"

"passing an airflow of uncontaminated air through the housing and the array of ultraviolet lamps"

and,

"after the airflow of uncontaminated air has passed through the housing, directing the airflow into the workplace to mix with the contaminated air in the enclosed workspace".

Neither Arnott nor Crook disclose a method of passing an airflow of uncontaminated air through a housing containing an array of ultraviolet lamps. Therefore, even if the references were combined, the resulting method would not pass an airflow of contaminated air through a housing containing ultraviolet lamps because Arnott clearly teaches that the contaminated air to be treated must be passed through the housing so that the contaminated air can come into contact with the radiation from the UV lamps in order for the contaminants in the air to be treated. The Applicant therefore respectfully submits that even if Arnott and Crook were combined they would not result in the method of claim 41.

With regard to claims 42-48 and 53-54, all of these claims depend or ultimately depend from independent claim 41. The Applicant respectfully submits that because the combination of Arnott and Crook would not result in the steps specified in currently amended claim 41, claims 42-48 and 53-54 would also not result from a combination of these two references.

Rejection of claims 10, 21, 22, 25-27 on the basis of 35 USC 103(a)

Claims 10, 21, 22, and 25-27 are rejected by the Examiner under 35 USC 103(a) as being unpatentable over Arnott (U.S.P.N. 2,279,810), as applied to claims 1 and 23 and further in view of Tabatabaie-Raissie et al. (U.S.P.N. 5,842,110).

With regard to claims 10, 21 and 22, Tabatabaie-Raissie et al. teaches exposing an airflow of contaminated air to UV lights. The Applicant respectfully submits that all of the limitations of claim 1 are not taught by Arnott because Arnott fails to teach an intake aperture for a housing containing UV lights, where the intake aperture is exposed to only substantially uncontaminated air, so that uncontaminated air is passed through a housing containing an array of ultraviolet lights. The Tabatabaie-Raissie et al. reference also fails to teach this feature. Therefore, even if Arnott was modified with the teaching of Tabatabaie-Raissie et al, as suggested by the Examiner, the resulting apparatus would not include the limitations of currently amended claim 1, namely that the intake aperture for the housing is only exposed to substantially uncontaminated air.

The Applicant therefore respectfully submits that claims 10, 21 and 22 would not be rendered obvious by the Tabatabaie-Raissie et al. reference because even if the teachings in Tabatabaie-Raissie et al. were used to modify the device disclosed by Arnott, as suggested by the Examiner, the resulting device would not have all the required limitations of claim 1.

In regard to the Examiner's rejection of claims 25-27, the Applicant has canceled these claims making the Examiner's objections moot.

Rejection of claim 19 on the basis of 35 USC 103(a)

Claim 19 is rejected by the Examiner under 35 USC 103(a) as being unpatentable over Soremark (U.S.P.N 6,358,478) as applied to claim 14 and further in view of Arnott (U.S.P.N. 2,279,810).

The Applicant respectfully submits that claim 13, from which claim 19 ultimately depends, is not anticipated by Soremark because the Soremark reference fails to teach "generating hydroxyl radicals in an airflow of **non-contaminated** air". Rather, Soremark teaches generating hydroxyl radicals in an airflow of **contaminated air**. Additionally, Arnott fails to teach exposing an airflow of non-contaminated air to UV lights, but rather,

requires that the airflow passing by the UV lights be contaminated with bacteria so that the contaminated air can be directly exposed to the UV lights. Therefore, even if Soremark was modified in view of Arnott, as suggested by the Examiner, the result would not be a method having all of the limitations specified in claim 13, namely the generation of hydroxyl radicals in an airflow of **non-contaminated** air. The Applicant therefore respectfully submits that claim 19 is not obvious with regard to Soremark in view of Arnott.

Rejection of claims 29-34, 37, 39 and 40 on the basis of 35 USC 103(a)

In regards to the rejection of claims 29, 34, 37, 39 and 40, the Applicant has cancelled these claims making the Examiner's objections moot.

Rejection of claims 35, 36 and 38 on the basis of 35 USC 103(a)

In regard to the rejection of claims 35, 36 and 38, the Applicant has cancelled these claims making the Examiner's objections moot.

Rejection of claims 49,50 and 52 on the basis of 35 USC 103(a)

With regard to claims 49, 50 and 52, all of these claims depend or ultimately depend from independent claim 41. The Applicant respectfully submits that because the combination of Arnott and Crook would not result in a method containing the steps specified in currently amended claim 41, claims 49, 50 and 52-48 would also not result from a combination of these two references, even if it was further modified with the teachings of Tabatabaie-Raissi et al., as suggested by the Examiner.

Rejection of claims 55 on the basis of 35 USC 103(a)

With regard to claim 55, this claims depends from independent claim 41. The Applicant respectfully submits that because the combination of Arnott and Crook would not result in a method containing the steps specified in currently amended claim 41, claim 55 would also not result from a combination of these two references, even if it was further modified with the teachings of Dall'Armi, as suggested by the Examiner.

New Claims

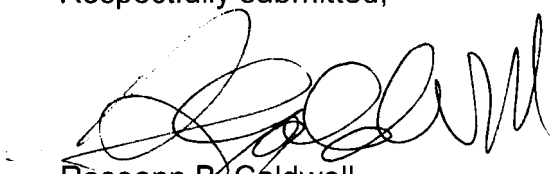
New claim 56 has been added, which depends from currently amended claim 1. As such, claim 56 continues to recite the elements that render the claim in question patentable over the cited references.

New clam 57 has been added to, which depends from claim 41. As such, claim 41 continues to recite elements that render the claim in question patentable over the cited references.

Conclusions

Applicant has addressed all rejections raised by the Examiner. Applicant submits that claims 1 to 57 are in a condition for allowance and such allowance is respectfully requested.

Respectfully submitted,



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